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ABSTRACT

The U.S. military has made numerous important contributions to the development of adult and continuing education. As in civilian adult education, military innovations in education have consistently used workplace learning. The educational benefits produced by the GI Bill democratized education by exploding the myth that "common" people did not belong in college and by serving as model for employer-supported human development through education. The military pioneered the use of standardized testing for screening purposes and has developed batteries of tests for screening vocational aptitude and basic academic skills. The General Educational Development testing program, which grew out of the military's extensive experience with testing, is now recognized by employers and institutions of higher learning nationwide. Other areas where the military has made major contributions to the fields of adult and continuing education include the following: documentation/recognition of learning acquired outside the classroom and integration of learning in traditional degree programs; distance education; off-campus college programs; instructional systems development; competency-based education; articulation of civilian and military education through the Servicemembers Opportunities Colleges program; advanced instructional technologies; and program evaluation. (The bibliography contains 46 references. Appended are excepts from the 1947 publication, "The Armed Services and Adult Education" by Cyril O. Houle et al.) (MN)

Some Major Contributions of the Military to the Field of Adult and Continuing Education in the United States

(A Work in Progress)

ED 404 454

By

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Paper for presentation
at the American Association of Adult and Continuing Education's
Adult Education Conference

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Disclaimer

This draft compilation of contributions is a summary of some military-related initiatives that have influenced the adult and continuing education movement. It has neither been coordinated with nor approved by any element of DoD or the adult education community.

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Some Major Contributions of the Military to the Field of Adult and Continuing Education in the United States

Introduction

The United States military forces have made many significant contributions to this nation. Among these contributions are several in the realm of education. The military has often been on the leading edge of fundamental change in education in the United States, especially in the last half century. Some practices that have become ingrained in the educational fabric of this country, even internationally, had their genesis with the military. In fact, two major revolutions--the democratization of higher education and the emergence of what is commonly referred to as adult and continuing education--owe much to the nation's servicemembers and veterans.

It is also important to recognize that the military has profited immensely from higher education in this country. One only has to see the extent to which military organizations have borrowed the processes and even the vocabulary inherent to the education community to grasp the fact that military training springs from, extends, and emulates education. In some key places, for example the military service academies and the various "war colleges," the higher education model has given more to the military than the military has contributed to civil education. The military relies heavily on the Reserve Officer Training Corps (ROTC) programs at American colleges and universities to furnish the largest cohort of young officers needed to fill the military force structure. ..

This paper, however, is limited to the contributions generated largely from military initiatives that now have significant implications for all adult and continuing education and the society that it serves. In the process of cataloging these contributions, two themes emerge: First, military innovations in education seem consistently to involve the workplace and the worker. Strengthening the tie between the enlisted servicemember and his/her vocation with the college and his/her degree program(s) through the recognition of workplace learning is part of this theme. So is the articulation of workplace literacy skills and education programs that ensure servicemembers have, indeed, mastered those relevant skills. The second theme is the matter of access to educational opportunities. What emerges here is that servicemember-workers have achieved greater access to high quality educational programs and services thereby helping raise their employability and upward mobility not only in the military but more importantly in the civilian sector. The military has long been recognized as one of the great engines of American social mobility. The military's education initiatives have played play major roles in these developments. This paper will address just a few of these notable contributions.

I. GI Bill

Just over fifty years ago, millions of veterans came home from World War II and entered college using what was called the "GI Bill and it transformed a nation." James Brady in the Sunday August 4, 1996 edition of *Parade* continues:

> With help from the original GI Bill of Rights, more than 7.5 million veterans went to college or other schools or received job training, according to the Department of Veterans Affairs. In the bill's peak year, 1947, vets accounted for nearly 50 percent of college enrollment. Overall, the breakdown was as follows:

- 2.2 million in college or a university
- 3.5 million in other schools
- 1.4 million in on-the-job training
- 690,000 in farm training

The program, which cost $14.5 billion and ended in 1956, proved highly successful. According to the U.S. Census Bureau, GI Bill veterans not only gained an edge over non veterans but also increased their income by 40 percent in the four years following 1947. Economists calculate that during the lifetime of the average veteran, the U.S. Treasury receives two to eight times as much in income taxes as it paid out in educational benefits. As of today, more than 20 million veterans and their dependents have taken advantage of benefits offered through subsequent GI Bills (rewritten in 1952, 1966, 1976 and 1984).

Of course, the bills' many benefits (including billions in home loan guarantees) affected much more than the nation's economy. As President Bush said: 'The GI Bill changed the lives of millions...It changed the life of our nation.' p. 4.

On June 22, 1944, President Franklin D. Roosevelt signed the G.I. Bill as a reward to veterans for good and honorable service. The 1976 Veterans Educational Assistance Program (VEAP) and the mid-1980's Montgomery GI Bill, however, changed the concept from a reward for honorable service to an incentive to enlist and serve honorably in the all volunteer Armed Forces.

In 1993, in anticipation of the Bill's 50th anniversary, Peter Drucker, America's preeminent management guru, expressed his belief that the GI Bill was the beginning of a major shift within American society to a "knowledge society" where knowledge became the primary resource for individuals and for the economy. "The GI Bill of Rights and the enthusiastic response to it on the part of America's veterans signaled the shift to a knowledge society." (Drucker, 1993) James Michener, America's great rapporteur, calls the law implementing the GI Bill "one of the two or three finest the Congress has passed since our Constitution took effect." (Michener, 1993)

With the GI Bill as the most well known military related contribution to American society as a whole, there are many other lesser known military-related contributions to the field of adult and continuing education. Cyril Houle, one of America's leading adult educators, found that, through the very struggle for democracy during World War II, adult education--a "new implement for democracy"--had been forged (Houle, et al, 1947).

II. Tuition Assistance

While the GI Bill provided educational benefits for veterans, benefits for active duty servicemembers did not become available until nearly four years later. War Memorandum No. 85-40-1, with Change 1, dated 2 February 1948, is often cited as the fore-runner document delineating policy on payment of tuition for extension courses taken by military personnel at a nearby accredited school or college during off-duty time. On May 13, 1954, Congress formally authorized furnishing civilian education for personnel in the Armed Forces through tuition assistance funding. In testimony before the House Armed Services Committee, the Pentagon proponent for tuition assistance appropriations indicated that off-duty education is "not part of his (servicemember's) military training." As part of that testimony, Rep. Robert Carlton Wilson expressed his support for the program:

> It seems to me that this program is a good encouragement to the GI benefit program. We have been talking about the drop in enlisted rates, and I think this sort of program might very well keep men in the service as long as they have this partial payment by the

Government and some encouragement by the Government to complete their education. (Senate Report 1336, p. 5101).

The concept of the employer helping employees go to college by offering tuition assistance has subsequently spread to many leading businesses and industries throughout the United States. Many leaders of the business and industrial sectors understand the importance of having "educated workers" who can glean and analyze essential information, think and act using that information until the mission is accomplished.

III. Literacy Education

The concept of literacy education in the military emerged during the earliest days of the American Army. In 1778 George Washington recognized the need for providing basic academic instruction to illiterate, convalescent soldiers following the bitter winter at Valley Forge (Wilds, 1938). The purpose of this instruction appeared to having nothing to do with requirements for any basic educational skills to perform military jobs. Instead, it was aimed at providing enlisted men with the ability to read and recite their *Bibles* in hope of spiritual enrichment and a better life in the future. It was not surprising that chaplains were formally changed with this education responsibility (Duffy, 1983). The pedagogy of that day saw reading as the ability to decode familiar text (Resnick and Resnick, 1977). Washington's initial efforts were later incorporated into an 1839 statute permitting "the administrative council at each post to hire a chaplain who also act as a schoolmaster" (White, 1968,p.479).

The history of literacy education within the military services is continuous since those early days with periods of emphasis occurring during war times such as the Civil War, World War I, World War II, Korean War, and the Vietnam War (Anderson, 1986; Sticht, 1982). In 1918, the Army introduced the first massive paper and pencil "intelligence testing" program (Duffy, 1983). The results of this testing provided the first tangible evidence of a literacy "problem." For example, the War Department found that 30 percent of the 1.7 million soldiers taking the Army Beta Test could not understand the form due to their lack of reading skills (Resnick and Resnick, 1977). At this point, literacy became "reading comprehension" instead of "oration."

By the beginning of World War II, the military leadership seemed to have forgotten the lessons learned during World War I in the use of testing as a means of identifying illiterates and low literates. Between October 1940 and May 15, 1941, soldiers were inducted into the Army based merely on an acknowledgment that they could comprehend simple orders given in the English language (Goldberg, 1951). This was determined by asking the individual if he could read or write. The Armed Forces quickly learned again that illiterates and low illiterates had extreme difficulty adjusting to the military service and performing military jobs in a satisfactory manner. Restrictions on induction of illiterates and massive in-service literacy education programs were established and maintained throughout that period. The *Soldier's Reader*, later the *Army Reader*, served as the basic text, supplemented by numerous pamphlets and other instructional materials to include a regular cartoon strip that told of the experiences of Private Pete and his friend Daffey. Examples of titles of this cartoon strip include: "Marksman Pete," "Pete Meets Gas," and "Private Pete Keeps Healthy." These materials were used extensively in special training units designed, in part, to upgrade literacy and English language skills of inductees.

Manpower requirements for the Vietnam War again required the military services to look seriously at the use and training of illiterates and low literates. During 1967, Department of Defense conducted Project 100,000. Through this project many of the approximately 400,000 men who had failed selective service mental examinations between October 1, 1966, and October 1 1967, were accepted into the military services. Literacy training was not considered integral to the training mission during Project 100,000. The principal thrust was on the use of these low-

level recruits, not on their development. USAFI materials were not considered particularly useful in assisting these soldiers, sailors, airmen and marines grasp basic combat training or specialty training from which military personnel received military occupational specialties, rates or ratings. As an outgrowth of Project 100,000, the Human Resources Research Organization (HumRRO) was tasked in the early 1970s to identify literacy demands inherent in Army jobs. After studying reading demands of jobs, the Army again tasked HumRRO to study ways to train people to reach those demands in some kind of literacy program. Dr. Thomas G. Sticht served as the principal investigator for this effort. The result was the Functional Literacy Program (FLIT) as documented by Sticht in HumRRO Report (1975). From this effort emerged the concept of literacy training directly related to military jobs training and duty performance.

In the decade of the 1990s a key personnel question remains as to what to do about the undereducated or lower aptitude youths who comprise a major segment of the young adult population from which the military services traditionally draw their new members either by recruitment or induction. In times of war, heavy manpower requirements require military personnel managers to lower the desired minimum qualification standards for entrance and continued service in the Armed Forces. Consequently, significant numbers of illiterate and marginally literate individuals have served during those periods. With the elimination of the draft in the mid-1970s, the continued maintenance of large active military forces has kept the spotlight on recruitment and retention of so-called "quality" service members under the "all volunteer" concept.

The personnel problem is exacerbated by the ever-increasing technology push in weaponry and in fighting doctrine. Modernization programs produce many major new systems of sophisticated military hardware in hopes of improved readiness, a competitive edge, or at least parity with any possible opponent. The personnel and technology problems are not unique to the military. Business, industry, the service sector, agro-business, and other elements of the American society experience similar situations. Workplace literacy is essential for job performance and upward mobility regardless of employer. Lessons-learned by the military in literacy education can be especially useful to the adult education field as a whole.

IV. Contracting Out Education

The primary philosophy of the World War I military leadership was rooted in the conviction that development of literacy education was not its responsibility, but rather the responsibility of the civil community (Strehlow, 1967). The War Department turned to the Young Men's Christian Association (YMCA) to develop and implement its education functions with the American Expeditionary Force early in 1919. The YMCA provided standardized methods, books and courses. The YMCA also provided "expert advisors and assistants for schools for officers and men" (Munson, 1921, p.477).

For the first time in its history, the military during World War I contracted out with civilian organizations for many products and services. The YMCA contract, cited above, was simply one among many. This proliferation of military contracts brought forth a perceived need for a civilian organization in Washington, DC, to help organizations gain access to those contracts. The American Council on Education (ACE) was formed in 1917 to fill that need. ACE did not perform a prominent role during the World War I era, however. But it did during World War II setting the model for the Military Evaluations Program (MEP) and for third party evaluations of education programs implemented by the military.

The history of contracting out many facets of educational programs and services has continued with a long standing struggle as to what functions should be performed by personnel assigned directly to the military services and what functions could just as effectively be contracted out. It

has been generally accepted that regionally accredited institutions should be the provider of postsecondary educational programs for servicemembers. Consequently the locally military installations within the continental United and major military commands in overseas areas have acquired institutions to provide specific programs of study using either a contract or a memorandum of understanding. Other contracts are routinely developed, awarded and executed for basic education instruction, for test monitors, and for operators of learning centers. Up through FY 1996, education services officers and specialists, however, have been either uniformed personnel or civil service personnel (beginning generally in 1956).

The most controversial issue regarding contracting out has dealt with the guidance counseling function. Counselors perform the primary functions of

- Interviewing and counseling servicemembers and other clients regarding valid career goals to include civilian occupations once the client is outside the military environment.

- Monitoring progress of individual servicemembers to ensure educational progress.

- Preparing and conducting educational briefings for groups or units to inform them of the entire educational program.

- Performing all other duties as assigned.

Counselors at times operate one-person education centers. In that role, they serve as the contracting officer's representative for non-personal services and institutional contracts and memoranda of understanding. They often do the educational needs assessments; coordinate physical facilities; provide testing services; supervise learning centers; ensure availability of instructional resources including library support and computer services; manage fiscal resources to include budgeting and expenditure of funds; conduct education center administration and record keeping; assist in education program planning and marketing; monitor compliance with regulatory and contractual standards and principles of good practice; and represent education at installation/command functions and activities. They dispense information and provide coordinative assistance whenever and wherever possible. They often handle student absences and resolve disciplinary problems. They are also often assigned "special projects," which in some cases are quite extensive and time-consuming. Education guidance counselors provide a wide variety of customer-focused services on the installation hopefully providing for a non-threatening environment for people to work through their education and career development needs and goals . These services are not duplicative of services provided by other agencies on the installation. Counselors are the "front line troops" of the DoD voluntary education program

The Army had contract counselors until 1974. Those contract counselors were on non-personal services contracts of short duration with no benefits, low compensation, and no guarantee of continuing service. In the 1974 DoD Appropriations Bill, the Congress directed: "the Army to discontinue the practice of hiring education contract counselors. If counselors are required, the Army should justify additional civil service positions," (House of Representatives Report 93-662, p. 59). No subsequent Congressional guidance has revoked this direction. Consequently, the Army has used this direction as firm guidance in dealing with this issue. Meanwhile, the Air Force still uses contract counselors on a limited basis particularly to counsel airmen at geographically separated locations.

Personnel ceilings for Department of Defense and, consequently, the military services dictate that some functions either be contracted out or eliminated. Some view a decision to "contract out" as a strong indicator that the military leadership considers that function is be ancillary, not especially critical to military personnel readiness. If it were vital, the function would be retained

in-house. Similar considerations occur in other governmental agencies and corporate America. The down-sizing (reengineering) movement affecting the federal government also has had major impact throughout business and industry. Corporate infrastructure responsible for personnel training and education functions are scrutinized for contracting out or elimination.

V. Standardized Testing for Screening Purposes

In 1918, the Army introduced the first massive paper and pencil "intelligence testing" program. The results of this testing provided the first tangible evidence of a literacy "problem." For example, the War Department found that 30 percent of the 1.7 million soldiers taking the Army Beta Test could not understand the form due to their lack of reading skills (Resnick and Resnick, 1977).

Standardized testing for screening purposes continued and was dramatically expanded during World War II. Early in World War II it became clear that the major objective of classification in a rapidly expanding Army was conversation of manpower. (Goldberg, 1951, p. 32) Careful pre-selection by local draft boards determined those who in every sense were unsuitable for military training and war fighting jobs. At the induction stations, it became important to determine those who were marginal inductees (illiterates, non-English-speakers, slow learners, etc.). New testing procedures were introduced in the military induction stations on August 1, 1942. The purpose for these procedures was two fold: "first, to help keep out of the Army those men who were so 'slow in learning' that they would be unable to carry out Army duties; second, to improve the sifting process so that the Army would no longer reject any men that it could use." (Goldberg, 1951, p.36) Under those new screening process was the Visual Classification Test, a non-language examination of mental ability administered in pantomime. Also introduced in August 1942 was a battery of individual tests such as the Well's Concrete Directions Test, the Block Counting Test, and the Directions Test.

As the World War II progressed, military experience with testing for screening purposes became extensive and more exact as millions of men were processed and tested to fill quotas for military training in preparation for specific job assignments. Testing for screening and classification purposes was further refined during the Korean and Vietnam conflicts.

Currently, the Armed Services Vocational Aptitude Battery (ASVAB) serves as the common test battery used by all military services for recruitment and retention of service members. There are many different facets of ASVAB, but, for the purposes of this discussion, the Armed Forces Qualification Test (AFQT) categories are the most significant in the screening for basic academic skills. The AFQT score is a composite result of scores on reading comprehension, word knowledge, numerical operations, and arithmetic reasoning subtests of ASVAB.

Scores on the AFQT are grouped into five broad mental categories with Category III divided into two groups. Servicemembers with scores in Categories I and II tend to be "above average" in trainability and are considered college-capable; those in Category IIIA are "average," generally considered an acceptable risk; those in Category IIIB are "average," but may be considered "at risk" academically for college work and for jobs requiring college-capable personnel; those in Category IV are "below average," definitely "at risk" academically and for jobs requiring college-capable personnel; those in Category V are "markedly below average" and, under current military accessions policy, not eligible to enlist. Obviously the military services prefer enlistees in the higher AFQT mental categories because it takes less training time and expense to prepare them for duty and continue their career development. (Department of Defense, 1982, p. 6.)

AFQT mental category groupings have enormous impact on all aspects of military personnel management including recruiting, retention, promotion, and job training. The military needs college-capable men and women as the Armed Forces become increasingly technical in nature.

It is an organization requirement for its personnel to be technically and tactically proficient by being able to think, to communicate, to reason and to act based on available information. Yet, these standards and classifications have placed definite restrictions on the recruit applicant pool particularly regarding recruitment among minority populations. An Office of the Secretary of Defense (OSD) study, *Profile of American Youth* (Department of Defense, 1982), revealed that, in a 1980 United States youth population subgroup analysis, the median AFQT score for White youth was 59, considerably higher than that of either Hispanics (23) or African Americans (17). (AFQT Mental Categories I and II and IIIA include percentile scores of 50-99; IIIB include percentile scores of 31-49; and Category IV includes percentile scores of 10-30.)

Even though over 90 percent were high school diploma graduates, the FY 1990 non-prior service accessions data for the active force show that among White recruits 24.70 percent were Mental Categories IIIB and IV; that among African American recruits 52.52 percent were Mental Categories IIIB and IV; and among other minority groups 39.84 were Mental Categories IIIB and IV. (*Population Representation in the Military Services: Fiscal Year 1990*, p. B8.) The problem extends to the Reserve Component Forces. Fiscal Year 1991 Selected Reserve Non-Prior Service Accessions data point out that, even though the 81 percent of Army National Guard recruits were racially listed as "White," over half (51.6 percent) were in Mental Categories IIIB and IV or academically at-risk for college work. (Department of Defense, 1992, pp.88 & 89.)

The study and data, cited above, illustrate the critical need for adult basic and developmental education for the educationally disadvantaged in the military services, especially among minorities, but also with whites. Its importance is further magnified when researchers review data regarding Montgomery GI Bill (MGIB) enrollment and usage. In simple terms, even though academically at-risk servicemembers enroll in MGIB and pay their $1,200, their probability of ever using the benefits is not good.

The possible relevance of military's standardized testing for screening purposes for adult and continuing education is huge. Most institutions now include more adult learners, more part-time students, and more ethnic minorities. In 1996 more than half of all community colleges and almost three in ten public comprehensive institutions described the preparation levels of entering students as "fair" or "poor" (El-Khawas & Knopp, 1996, p. 20). As in the military, screening and placements examinations, especially in the areas of English and mathematics, are essential tools in the higher education today.

VI. General Educational Development (GED) Testing

Out of the military's extensive experience with testing grew the GED Testing Program. Dr. Francis Spaulding, former Dean of Education at Harvard University, recruited by the Army to head up the Army Institute (later the United States Armed Forces Institute(USAFI), had an idea that college credit could be granted on the basis of tests and that credit for the high school diploma could be granted to someone who passed a test. This idea lead to the development of this "very uniquely American" program (Turner Interview, 1986, p. 5) Turner relates:

> Spaulding had this idea that for men in the military who had been drafted out of the high school classroom as they did in World War II, to take an examination and be granted a high school diploma. Now, of course, Spaulding knew that Dr. Lindquist in Iowa already had developed a battery of tests called the Tests of Educational Development. So, he talked with Lindquist ..., and Lindquist said he could redesign his tests into five tests to cover the general objectives of the liberal high school program of instruction: tests in English, social studies, science, literature, and mathematics. And he did that. Those tests became available to us at USAFI in about July 1943. Although, let's see now, it might have been August. I (Neal Turner) was

> sent out by the Navy Department to the University of Chicago to inquire about the tests because the (American) Council (on Education) had established at (the University of) Chicago the Veterans Testing Service. The Veterans Testing Service was to be established even though they didn't have the tests yet. (Turner Interview, 1986, p.6)

The USAFI staff designed the GED battery of tests to measure the major outcomes and concepts generally associated with four years of high school education. At first, the tests were administered only to active duty military personnel and World War II veterans to assist them in readjusting to civilian life and pursuing higher educational and vocational goals. The USAFI examinations staff was composed of civilian testing experts who worked with an advisory committee that was established with the support and cooperation of the American Council on Education, the National Association of Secondary Schools Principals, and regional accrediting associations. The basic concept underlining administration of the GED Tests to military personnel and veterans - the assessment of high school graduation equivalence for individuals who did not complete a formal high school program of instruction - prove to be a significant factor for them in pursuing their educational goals. (Chapter 1, *GED Manual*)

The Veterans Testing Service administered the GED Testing Program under the policy direction and supervision of the Commission on Accreditation of Service Experiences of the American Council on Education. In 1947 the tests were administered to non-veteran adults for the first time. By 1959, the number of non-veteran adults tested exceeded the number of veterans. In 1963, in recognition of this change, the Veterans Testing Service was renamed the General Educational Development Testing Service.

The Commission on Educational Credit and Credentials (formerly the Commission on Accreditation of Service Experiences, established in 1945) is the policy making and advisory body of the GED Testing Service. The Office on Educational Credit of the American Council on Education, now known as the Center for Adult Learning and Educational Credentials, is responsible for the administrative supervision and high school graduation requirements for employment and admissions to apprenticeship and training programs. Additionally, the admission policies of most postsecondary institutions provide for accepting GED Test scores in lieu of complete high school transcripts. (Chapter 1, *GED Manual*)

Since its inception, the GED Program has undergone continuous refinement and has gained wide acceptance (all 50 states and several provinces in Canada). Initially, the GED Tests were available only in English. In recent years, versions in Spanish and French and for the visually handicapped have been added. Because of this major effort in adult education, thousands of certificate holders, to include such luminaries as a former Chief of Naval Operations and a current U.S. senator, experience rewarding careers both professionally and personally and enrich society as productive citizens.

Recognized nationwide by employers and institutions of higher learning, the GED Testing Program has increased education and employment opportunities for millions of adults. The current GED battery consists of five tests: writing skills, social studies, science, interpreting literature and the arts, and mathematics. Nearly 15 percent of high school diplomas issued each year in the U.S. are GEDs.

VII. Recognition of Learning Acquired Outside the College Classroom and Integration of that Learning in Traditional Degree Programs

For over fifty years the Military Evaluations Program (MEP) has evaluated formal military training in terms of academic credit, allowing servicemembers and veterans to earn credit for

college-level learning acquired in the military. Its roots go back to World War I as Neal Turner recalls:

> This program didn't begin in World War I but had its origins in World War I for this reason. There had been an educational program that offered courses to the Army. Then, the Army men wanted credit. They applied to colleges for credit for courses they'd taken and for their service experiences. Now, there was no American Council on Education available to be of help, so over the years the colleges accepted a policy that was called 'blanket credit.' So, these were men who were in college before the War, and they served in World War I about a year (you see, they went in 1917 and came out in 1918). So, colleges adopted this policy of granting a man a year's credit for merely serving in the Armed Forces for a year, regardless of what he had done. This became a scandal in the Twenties. In one case that I know of, there was a young man from Colorado got a year's credit from the University of Colorado, and he flunked out. Years later he ran for governor of Colorado, and the University had a tough time while he was governor getting their budget approved by the legislature. That was the outstanding case that proved that you couldn't grant credit on a blanket basis. (Turner Interview, 1986, p. 1).

The Military Evaluations Program grew out of USAFI and the work of the USAFI staff. Prominent among that staff was Cornelius P. "Neal" Turner. Turner recalls:

> Well, in 1942, you remember, all of Europe had fallen to the Germans, all of Africa had fallen to the Germans, and all the Far East had fallen to the Japanese. And so, things didn't look too good for this country, and we had also experienced Pearl Harbor. I was superintendent of schools in Worcester, Massachusetts, at the time, and the question was whether I could do something. So, I went down to Boston and applied for a commission in the Navy (at least I was given a commission). I was sent to Dartmouth College for indoctrination (they made us ninety day wonders, you know; we were supposed to do everything.
>
> I was originally going to go from Dartmouth to the Navy Gunnery School because my background was mathematics. (But instead) I (went to Washington, DC) and was (assigned to) the Education Services program in the Navy, and the Navy was in USAFI, you see. So, because of my education background, they wanted me to go out there (University of Wisconsin). When I went out to USAFI, there was only one Navy officer and five Army officers, and they had about fifty Army enlisted men. I was the second Navy officer. When I left in December 1945 to go to the American Council on Education, we (USAFI) had 500 civilian employees; we had 100 military officers, Army and Navy; and we had grown from 5,000 enrolled students to over a million after three years....
>
> I went to the files of the 5,000 students and selected those men who had left high school....who had not graduated from high school..., and who had completed one or more USAFI courses. I sent to the men a memorandum telling them that...: 'USAFI does not grant credit or recommend the granting of credit. But, we are going to send a record of your military service and courses you have completed to your high school. They may not grant credit, but at least we are starting out in hopes that some day you will get credit for this work. Please send back an application listing what your military experiences were.'
>
> Well, the applications came back, and I had committed USAFI now to doing all this for them. The application came back, and the men had completed different service school training. I didn't have any service school training programs, so the question

was, How do we get them? I went to (Francis) Spaulding, (USAFI Director) and said there was a problem. He said, being a colonel, for me to write to the headquarters of the various services and request that I be sent those service school training programs.

Well, that worked pretty good. They sent them in, and some were detailed descriptions of what was taught, some were just figures. So many of them came in, I couldn't handle them. I found out--you see, we were in the old Montgomery Ward Building in Madison--I discovered at USAFI that a lawyer who delivered the mail around the two floors was formerly a lawyer with the Labor Relations Board. I asked him if he would rather work with me and analyze these programs and write a short descr.ption of them, or if he'd rather go on doing this. He said, "I'd rather go work with you." Oscar Geltman, his name was. I sent him right to work. What is now in the Guides, he originally wrote most of it. He did a great job."

Turner sent Geltman's work to George Tuttle, director of Admissions at the University of Illinois, who produced the first *Guide to the Evaluation of Educational Experiences in the Armed Services*. It was done in pieces and was never a bound book. Many people referred to it as the "Tuttle Guide." After serving time with the American Council on Education and Council for the Advancement and Support of Education (CASE), Turner returned to USAFI as its deputy director (1949 to 1953). The USAFI leadership wanted the "Tuttle Guide" revised and updated. Tuttle was unable to do it so Turner was tasked to do it, hence the production of the well known "Turner Guide" funded by DoD.

Henry A. (Hank) Spille came to the American Council on Education in 1974 as Project Director of the Military Occupational Specialty (MOS) Feasibility Study which laid the groundwork of broadening the Military Evaluations Program to include learning from on-the-job workplace experience as well as service schools in their academic credit recommendations.

All MEP evaluations are conducted on-site using a team of subject-matter specialists--faculty members who teach in the appropriate field at colleges and universities across the country. These teams, along with an ACE MEP staff member, have access to pertinent course or occupation information including testing instruments. They describe the course or occupation in terms of learning outcomes and reach a consensus on a credit recommendation. In the case of occupations, the team interviews soldiers holding the specialty. Evaluation teams identify key learning outcomes and quality elements that promote equal transfer treatment.

In addition to serving as the standard reference for colleges and universities to award credit for military learning, the ACE Guide is the keystone for Servicemembers Opportunity Colleges network systems (described later) and AARTS. It is the foundation upon which servicemembers and veterans build their degree programs. ACE plays an important role in assisting these men and women in developing their full professional and personal potential.

For many years these evaluations have been published biannually in the *Guide to the Evaluation of Educational Experiences in the Armed Services*, the standard reference tool used by over 3000 U.S. colleges and universities to award credit for learning achieved in the military. No data or even estimates are available as to the amount of credit that has actually been awarded. One can get a glimpse of the use of the *Guide* throughout Servicemembers Opportunity Colleges (SOC) data. SOC data show that nearly four million semesters hours of academic credit has been awarded and applied to individual degree programs through SOC network systems. Individual student records indicate that an average servicemember receives approximately 16 semester hours of academic credit based on learning achieved through the military workplace and formal military training. These data are simply examples of the magnitude of the blending of workplace education and training into traditional academic programs made possible through the Military Evaluations Program.

Translation of workplace learning from training and experience into academic credits in higher education has expanded to civilian sector. Based on many years of MEP success, ACE developed and implemented the Program on Noncollegiate Sponsored Instruction (ACE/PONSI) which is a similar translation of government, business and industry training into meaningful recommendations for academic credits that colleges and universities award and blend into degree programs engaged in by worker-students. These credit recommendations are published annually in *The National Guide to Educational Credit for Training Programs* This partnership of workplace training and experience and higher education has lead to more relevant adult learning and credential achievement.

VII. Distance Education

As referred to in earlier paragraphs, the War Department, on December 24, 1941, authorized the establishment of a correspondence school for Army enlisted soldiers. The Army Institute began operations on April 1, 1942, at Madison, Wisconsin, in facilities donated by the University of Wisconsin. By February 1943, its name was changed to the United States Armed Forces Institute (USAFI) to reflect the extension of services to the Navy, Marines and Coast Guard. Literacy and high school as well as college and vocational courses were developed and offered by correspondence, using the U.S. Postal Service and the military postal systems overseas. This method of study was an attractive and efficient method of instruction for service members at permanent duty stations scattered throughout the world. As USAFI developed, so did its need for self-teaching and testing materials. USAFI produced numerous adult basic education instructional materials. *On Your Mark, Get Set, Go* series and the Metropolitan Achievement Test served as important course material for military literacy programs.

College and vocational courses were provided by the extension divisions of participating colleges and universities under contract with the Government. Enrollment fees for the courses were kept to a minimum, as little as $2.00. The principal funding mechanism for USAFI was through the "Welfare of Enlisted Men Funds" (Strehlow, 1967, p.41).

By 1945, USAFI had extension branches in London, Rome, Anchorage, Brisbane, Manila, Cairo, New Delhi, Puerto Rico, the Antilles, Tokyo, and New Caledonia. By establishing extension branches, the waiting time required for application processing, receipt of materials, and assessment of programs could be substantially reduced. In January 1944, U.S. servicemembers who were Prisoners of War were permitted to enroll in USAFI courses without payment of funds. By June 1945, more than 100,000 education manuals and 15,000 USAFI correspondence courses were in the hands of the War prisoners Aid of the YMCA for distribution to American POWs in Europe and in Japanese camps. The Geneva Office of the War Prisoners Aid became known as the Geneva Branch of USAFI (Strehlow, 1967).

During in the rapid demobilization following World War II, USAFI attempted to assist servicemembers with their transition to civilian lives. USAFI continued its work through the Korean and Vietnam conflicts but many in the civilian sector believed that USAFI was in competition with education programs offered through the states. Consequently, in 1974, Congress deleted all USAFI funding and brought about its demise. The education leadership among the military services understood the need for an education support organization within DoD to help servicemembers with correspondence instruction, access to external degree program, and academic testing. Consequently, the Defense Activity for Non-Traditional Education Support (DANTES) was created under Department of Navy with a limited mission and tight budget.

The USAFI effort represented a massive commitment to distance education on a worldwide scale without the use of modern technologies and media.

About the time that Congress killed USAFI in 1974, it authorized the establishment of the Program for Afloat College Education (PACE). For the first 13 years of PACE, the courses were offered on ships through the traditional classroom method. Courses were taught by faculty from seven different colleges and universities. Currently courses include basic skills and pre-colleges course for no credit, as well as college-level courses at the lower undergraduate (freshman/sophomore) level of credit. This program was known as "PACE I" until July 1995 and was offered on medium to large surface ships. In 1987, PACE II began offering interactive computer courses through the Middlesex Research Center, Inc. (MRC), a for-profit corporation. PACE II focused on submarines and selected small surface ships.

In July 1995 the two programs were combined as PACE. The contract for PACE was awarded to MRC, with six colleges serving as sub-contractors to MRC. Central Texas College has offered instructor-based courses aboard U.S. ships since 1976 and continues to offer 152 courses as the only sub-contractor offering instructor-based courses. As of December 1995, the following four colleges offer interactive computer courses through MRC technology: Coastline Community College offers 11 different courses, George Washington University offers 11 different courses, the University of Oklahoma offers three different courses, and Richland College offers five different courses. PACE student can achieve an associate degree from either Coastline Community College or Central Texas College as part of PACE.

The following principles guiding PACE came from statements articulated both by the Assistant Chief of Naval Personnel, Personal Readiness, and Community Support, and by the Director of Education Programs and Services for the Department of Navy at the PACE Workshop held in Killeen, Texas, on July 12, 1995:

> The central goal of the current PACE program is to provide the sailor the opportunity and mechanism to earn a college degree. The program will expand the number of participants in the program, expand the number of courses, and increase the number of upper-division courses. While achieving this expansion, PACE will continue to increase and enhance the quality of the program, improve course content, and achieve better testing and grading. The program will be innovative, using the educational technology available. The program will use feedback from sailors and contract participants for continuous improvement. The program must remain flexible and willing to try new procedures leading to successful degree completion for the sailor. (San Diego MIVER Report, 1995, pp.29-30.)

The clear commitment of the Navy to these principles makes this program a model distance learning undertaking. The need for PACE is self-evident. The difficulties in its development, design, and implementation are monumental.

This paper will not enumerate the vast influence the military research community has had in the development of media-based distance learning. Such influences reach back to the early development of Programmed Logic for Automated Teaching Operations (PLATO) at the University of Illinois. In the 1970's the Education Directorate, Headquarters Department of the Army sponsored a "PLATO Computer Assisted Instruction Project" with Fort George G. Meade to demonstrate the effectiveness of an electronic classroom using the on-line PLATO system by Control Data Corporation. These examples merely illustrate the tip of the iceberg regarding the military's efforts in the design, development and use of distance learning.

IX. Off-Campus College Programs

Historically, the University of Maryland has taken a lead role in supporting the military services with voluntary postsecondary education programs. With the growth of education programs in the post-World War II period under the leadership of USAFI, a serious void was felt because USAFI lacked a direct accrediting capability. This brought forth institutional involvement in Armed Forces education (Berry, 1974, p. 59). In the late 1940s, the University of Maryland established the College of Special and Continuation Studies. Its first classes were conducted at the Pentagon. The course was "public speaking" taught by Dr. Ray Ehrensberger, Head of the Department of Speech and Theatrical Arts. In early October 1949, the first University of Maryland team arrived in Europe with classes opening on 31 October with an enrollment of 1,851 students. Shortly thereafter, Dr. Ehrensberger was appointed as the first Director of the University of Maryland in Europe. Today, the University of Maryland University College continues to conduct programs throughout Europe and Asia, as well as at the Pentagon, and on installations in the State of Maryland. Its *Catalog* includes educational opportunities for U.S. military and government personnel and their families as an important part of its "History and Scope." Each year the University College holds commencement ceremonies in College Park, Heidelberg and Tokyo.

Historically, the education of servicemembers has been directed more toward the individual as a member of society rather than a part of a military machine. Education has been aimed toward (1) the servicemember as a unique individual, (2) the service person as a member of a specific armed service, and (3) the service person as a member of society at large (Berry, 1974, p. 27).

Another of the many institutions that has made a strong commitment to voluntary education in the military services is Park College whose main campus is located in Parkville, Missouri. Currently it has military resident centers at many military installations (Air Force, Army, Navy, and Marine Corps) as well as at National Guard and Reserve Units. Its largest degree completion programs are in Management and Computer Science. President Donald J. Breckon describes Park College's Military Resident Center System:

> Park College employs administrators at all these sites, along with support staff members. A senior faculty member is employed to be academic director. The administrator and academic director combine their efforts to locate faculty, all of whom have credentials reviewed, evaluated and courses approved by the program coordinators on the home campus. An elaborate faculty development program exists, as well as peer, self, and student evaluation accomplished with the annual Faculty Performance Review.
>
> Classrooms are designated, computer labs are established and programs are implemented. The key to all such programs is provision for student services.
>
> Registrations are handled on site, as well as the processing of financial aids and benefits. Text books are sold on site. Written program plans are developed for each student, that lists all courses required for the degree, with a term course completion schedule of academic requirements. A transcript is generated at the end of each semester instead of a grade report, so that students always have an up-to-date list of courses completed, and courses remaining are indicated on their program plans.
>
> Attendance policies accommodate military mission commitments, as for example 'temporary duty assignment.' Classes are scheduled in eight and nine week terms, so as to complement rather than deter from the primary military mission commitment.
>
> Libraries are established on the base, and students are given access to the home campus library via computer and modem.

> The American Council on Education guidelines for awarding military credit are fully utilized, as are CLEP and DANTES exams. The Park College student is thus assured of as much advanced placement as can be justified through recognized academic criteria (Breckon, 1989, pp. 12-13).

Even though each supporting institution has its own policy and procedure, the policy and procedures, outlined above, can serve as an example. While each institution operates autonomously, each must adhere to accreditation standards and requirements of states in which it operates. It must comply with memoranda of understanding, contracts or other types of agreements to offer programs for the military. It must meet standards set by the Department of Veterans Affairs and be approved in order for students to receive Veteran's educational benefits payments. It must attempt to satisfy the needs of both the military service as well as the student learners. A masterful juggling act on the part of the institution is required if it is to be successful.

The methodology for successfully offering off-campus programs for the military has helped many colleges and universities to develop off-campus programs in facilities controlled by business and industries and in local communities away from the home campus. The military experience with off-campus education programs has helped break the paradigm that college-level learning is somehow tied solely to the "sacred soil" or to the "ivy covered buildings" of the home campus.

X. SOC: The Consortium and Network System

Servicemembers Opportunity Colleges (SOC) was created beginning in 1972 to martial the resources of the higher education community to facilitate and promote the voluntary postsecondary education of servicemembers. SOC was founded on the premise that the enlisted servicemember deserves higher education like that of his/her civilian contemporaries. To achieve this, creditworthiness of learning based on military service school coursework and military duty performance should be evaluated by civilian postsecondary institutions (assisted by the Military Evaluations Program, a part of the Center for Adult Learning and Educational Credentials, American Council on Education) and these appropriately accredited postsecondary institutions should determine eligibility for credit and grant degrees. Credits for extrainstitutional learning would be transferable among postsecondary institutions and be blended where appropriate into traditional degree programs. Degrees earned by servicemembers were to be fully acceptable in the civilian sector, enabling the servicemember/veteran to compete for jobs along with his/her civilian contemporary.

SOC is governed by a Board of Advisors representing the national higher education associations and the military. This Board determines the Principles and Criteria that guide SOC and its member institutions. By this mechanism, and through the programs and services that SOC manages for the Services and the National Guard, the higher education community participates in voluntary postsecondary education of servicemembers and endorses efforts to provide educational options to servicemembers as legitimate as those enjoyed by civilian students.

The Army recognized in 1977 that a combat arms or combat support soldier had little need for a degree in military technology or in Infantry, Armor, or Field Artillery, even if any such degree programs could be made legitimate within higher education. Instead, soldiers, many of whom are minorities, need degrees fully acceptable in the civilian community. Legitimate opportunities for education and training are strong recruiting tools, particularly for college capable men and women (high school diploma graduates mental category IIIA and above). Although fully recognized for its excellence, much of soldiers' training for ground combat does not equate to academic learning or even vocational learning in a civilian higher education context. Terminal

degrees in Army combat or Army combat support training are not attractive as recruiting or retention incentives and do not meet soldiers' needs for higher education. Hence, the Army, followed by the Navy, came to SOC for degree planning and networking.

SOCAD (SOC - Army Degrees) is an Army Program that builds upon the general Principles and Criteria that govern SOC by adding a complex set of interconnected curricula and specific rules to facilitate completion of those curricula. Colleges must agree in advance as to course transferability. They grant credit for learning through military training and experience where appropriate, and they are reasonable about acceptance of this nontraditional credit. They must issue written contracts that includes these details and making clear the requirements the student must meet. They must be forthcoming in recognition of associate degree work in baccalaureate programs.

When the Secretary of the Army decided in 1977 to ask SOC to develop SOCAD, he also approved the development of a transcript registry system resulting in the Army/American Council on Education Registry Transcript System (AARTS). AARTS is a joint activity of the Army and ACE. It is designed to help college officials award soldiers academic credit for learning gained in the Army. AARTS provides enlisted personnel entering active duty after October 1981 with an individualized transcript of all their military educational experiences, including those that carry college credit recommendations. Since its inception in 1986, the AARTS transcript has been used by thousands of servicemembers who need a permanent record of the skills and knowledge gained from their military education and training experiences. In addition to helping college and university officials award credit for Army learning, the transcript also provides employers with a better understanding of the responsibilities and skills that servicemembers have gained.

The academic community in the United States has strong and continuous record of concern regarding the proliferation of degrees awarded by the military, particularly by military organizations designed primarily to fulfill training functions. This is NOT simply because of competition for education dollars: it is because of the conviction that training and education are different; because mechanisms can and have been created within higher education to accommodate the educational needs of the servicemember; and because of the belief that academic standards and the purposes of education are best served and protected in the civilian academic community.

The concept of military "community colleges" has met strenuous objections in the higher education community. First, the military community college concept duplicates educational opportunities currently available in the civilian sector and competes in the delivery of academic degree programs and the awarding of degrees with legitimate regionally accredited civilian postsecondary institutions. Second, the military community college concept focuses on the military organizational needs for training instead of the educational needs of the servicemember, whose options can be severely limited. Third, the AAS degrees that can be offered by a military "community college" are, in fact, terminal degrees, seriously limiting their articulation into any other level of higher education that the servicemember may aspire to achieve. Fourth, they would consume resources available that should be devoted to the mission and functions under DoD Directive 1322.8 of promoting the voluntary aspects of postsecondary education.

SOCAD obviates any need for the Army to create "community college" structures. Army installations can enlist colleges and add new curriculums to SOCAD, or even whole curriculum networks, to meet soldier needs as they are identified. SOC is flexible in including new approaches to blend traditional and nontraditional credit and to integrate appropriate amounts of credit for learning based on military training and experience into degree programs.
With SOC, and Army's SOCAD System, there is a widely recognized system for recognizing the creditworthiness of learning achieved at training schools and at their military duty locations and

integrating that credit into legitimate degrees offered by regionally accredited civilian colleges and universities. This system is part of and supported by the national higher education community. Insisting that the accepted, proven system be used will:

- Ensure that the full range of education options is available to servicemembers, rather than simple enrollment of all into training-dominated terminal associate degree programs;
- Ensure that properly evaluated credit is integrated into degrees;
- Ensure that associate degrees conferred contain as much credit as possible that can apply toward the baccalaureate;
- Ensure positive endorsement and participation by civilian higher education community;
- Avoid the isolation of the military from academe;
- Meet the promise of legitimate educational opportunity held out on recruitment;
- Serve the nation by producing educated veterans, rather than trained servicemembers that have been "issued" a degree.
- Avoid an attempt to create "community colleges" that compete with civilian higher education and issue degrees of questionable merit that will surely touch off a firestorm in the higher education community and evoke criticism from soldiers, taxpayers, and Congress.

The SOCAD system has been replicated with the development and implementation of SOCNAV for the Navy and SOCMAR for the Marine Corps. Even though the SOC net system currently has three focuses it is basically one system. SOC with its network system is, in fact, a giant articulation agreement among participating colleges and universities to serve the military population. It serves as a model for other such ventures in adult and continuing education.

XI. Instructional Systems Development/Competency-Based Education

The training community in the military services took giant steps during the decade of the 1970s to develop and implement a systems approach to training. Instructional Systems Development (ISD), heavily influenced by Robert Gagne and codified under a military contract by Robert Branson, involves the systematic evaluation, analysis, design, development, and implementation of training programs and training requirements can be clearly identified. Task performance specifications (TPSs) are developed. These specifications consist of detailed descriptions of overall activities, the conditions of collective and individual task performance in a mission environment or duty position, and the desired results and standards. TPSs enable the development of task performance measures (TPMs). A TPM is an analyst's prescription of the most feasible performance measure of collective and individual task in a mission environment or duty position when it is not possible to reproduce in a training situation the actual conditions of task performance. TPSs and TPMs lead to the development of terminal learning objectives which fully prescribe the conditions, behavior and standards of performance for the training setting (TRADOC Regulation 350-7, 1982).

Evaluation within the context of ISD is not considered simply as the process following implementation of the training program. The term "evaluate" is used in the general judgmental sense of the continuous monitoring of a program or of the training function as a whole and involves both verification and validation. The process, as envisioned in ISD, consists of internally evaluating the training program during each phase of its preparation (at least to the degree that fiscal and manpower resources and time permit) while concurrently externally evaluating the overall training function. Thus, following implementation, feedback is used to evaluate the program, assess the quality of job performance and check the organization's overall responsiveness to training needs.

Education's equivalent to ISD is the competency-based adult education process. Like ISD, CBE (competency-based education) is a process by which an educational program can be systematically planned, designed, developed, implemented, and evaluated. Although the CBE process is interpreted differently by various practitioners, the importance of the concept stems from the absolute requirement that learning outcomes be established, recognized and readily available both to the students and the teachers. Learning for the student is not a deep, dark mystery dependent on a series of "ah-ha" experiences. Program objectives, agenda and standards for acceptable learning achievements are planned and stated up front. Students can proceed through the program with the minimum distraction or waste of time and other resources. They know generally what is expected and why this learning is important for them. Through this process, sponsoring organizations come to grips with their instructional needs in terms of learning outcomes. They can pinpoint education resources to achieve specific objectives. They are able to measure the results for effectiveness and cost benefits. ISD and CBE have had enormous influence on recent institutional focus on expected learning outcomes and systematic planning for their achievement.

XII. Advanced Instructional Technologies

The military through its research community have led the nation in the design, development, and fielding of advanced instructional technologies to include the flight simulator in aviation training. Today the military is a virtual warehouse filled with battlefield simulators and simulation devises and exercises. Instructional systems using satellite delivery are common place. Now these are being replaced, at least in part, with the internet and the world wide web.

Headquarters, Department of the Army Education Directorate, helped sponsor some highly innovative projects in the late 1970s and the early 1980s . These included the "Intelligent Video Disc Functional Literacy Project" with U.S. Army, Europe. This project was contracted to the European Division of University of Maryland University College to develop a functional basic skills program using gaming techniques. The program called "Stars" used the Star Wars theme to engage students in basic skills problems. Other efforts included the "Spatial Data Management Project" and "Hand-held Vocabulary Tutor Computer Project" with the Army Research Institute; and "Information and Instructional Systems Design Project" with Office of Personnel Management.

Yet often the promises of education technology turn out to be fads that come in with great fanfare one moment and are scrapped for a new panacea . Postsecondary programs offered within the military have not been immune to this phenomenon. Many military education centers have extensive language and computer laboratories. Some may have elaborate satellite networking capabilities or interactive television classrooms. Some of these educational resources are used regularly; many stand idle for months. Many educators within the military find automated instructional delivery systems too expensive. Others have been zealous advocates for particular systems. Still others believe that these systems should be used sparingly and only as an adjunct to teacher-driven classroom instruction. Still in the 1990s, there remains a feeling among some that learning achieved from "teaching machines" is suspect or, at least, inferior to traditional classroom-based coursework or the Socratic method. Yet, as one Army education specialist stated:

> The technology has the capability of placing at the finger-tips of any instructor (or student) , a cornucopia of resources; an instant library that can be accessed easily, quickly for virtually any kind of information. ...Technology has the power to help us in three areas and they can be fairly distinct. It can help us in the area of instructional delivery .... It can help us in the area of administration through the traditional kinds of management information. It can help in counseling through informational retrieval. ...To elaborate--in instructional delivery, right

now we see technology used more or less as an automated page turner. It is not the most imaginative use of the technology but right now it is the only way that we manage to figure out how to use this tool called a computer (Biebrich, 1985).

Even though the above commentary was made ten years ago, not much seems to have changed. Colleges and universities, nevertheless, do offer servicemembers degree programs with such titles such as "external degree programs," "independent study," and "distance learning programs" using media for course presentations that include:

- •video and /or audio cassettes;
- •learning packages and /or independent guided study with interaction with instructors via mail, telephone, electronic mail, and teleconferencing;
- •television (both public and interactive);
- •video disc;
- • satellite;
- •computer-assisted instruction including use of PLATO method of delivery and personal computer courseware;
- •newspaper;
- •radio;
- •paper-based correspondence; and
- •on-line internet

There is considerable rationale for identifying and fully exploring educational programs, systems, courses and processes that encourage and assist servicemembers in thinking and acting on their own and in concert with others. High quality independent study/distance learning methodologies appear to offer this type of encouragement and assistance. They increased student learning opportunities. Often servicemembers are not able to participate in traditionally delivered courses and programs. Alternative delivery educational programs allow students to participate while being physically at isolated military sites or on board ships around the world. Students can readily engage in these types of college degree programs at education centers, subcenters, learning centers, and/or libraries on military installations/ships both within the United States and in overseas commands. Often students can do independent study/distance learning college work in their own living quarters or at their normal workplace as time and circumstances permit.

A recent trend is for traditional delivery institutions to prepare alternative means for course completion. When students are rapidly deployed, they no longer need to drop their courses but instead they can continue their studies at a distance using e-mail and other alternative means. This trend is commendable in that it combines the best of two worlds for the highly mobile servicemember-students.

XIII. Evaluation

The American Council on Education commissioned some of the most exhaustive studies involving education of military personnel during World War II. One of these studies--Houle, Burr, Hamilton and Yale (1947) reviewed literacy training during this period in the overall context of adult education in the War Department. Cyril Houle concluded this book with an excellent history of implications found in adult education in the Armed Services that may have meaning for the adult education field in general (see attachment). Ginzberg and Bray (1953) also provide considerable information on the problems of illiteracy confronting the Army in World War II and efforts to overcome them. Their work was particularly noteworthy in identifying a deep conviction held by many leaders of the Armed Forces that development of literacy was not a responsibility of the military but of the civilian education community. Perhaps the most comprehensive efforts in documenting Army training of illiterates during World War II was done

by Samuel Goldberg (1951). His work is valuable for its detail of program development, philosophy and purposes, actual content, and evaluation efforts accomplished.

Questions about the quality and legitimacy of military educational programs surfaced in a 1977 *Change* article entitled "The Disgrace of Military Base Programs." In this article, Kenneth Ashworth, Commissioner of Higher Education for the State of Texas, and W.C. Lindley, contended that if these programs were subjected to close educational scrutiny they would be classified as "diploma mills." They found that regional accrediting visits to on-base programs were rare and there was a lack of standards and review. This Ashworth/Lindley article triggered a long series of charges and rebuttals.

In 1979, Steven K. Bailey, a former vice president of the American Council on Education, then professor at Harvard University, wrote an essay about "selling academic credentials at cut rates in an increasing cut-throat marketplace." (Bailey, 1979, p.vii) He asked the salient question regarding on-base college programs: "Quality control: whose responsibility is it--the Congress, the Department of Defense, base commanders, education services officers, participating colleges and universities, state licensing and higher education coordinating bodies, federal agencies, higher education associations, accrediting and/or associations?" Department of Defense countered by contracting with the Council on Postsecondary Accreditation (COPA) to conduct a one-time "case study" worldwide of the education programs existing on military bases. Quite predictably, this study found a variety of practices. Some were praiseworthy while others needed improvement. The conclusion of the case study was that servicemembers needed to share in the postsecondary educational opportunities available to other citizens and DoD should rely on appropriately accredited civilian institutions to provide these programs. In addition, the programs and procedures of these institutions must be sufficiently flexible institutions to offset servicemembers' mobility, isolation from campuses, and part-time student status.

During the 1980s, the military services contracted with regional accrediting associations for visits to selected military installations. These individual service contracts helped refine the questions about quality that needed to be asked and set the stage for a more systematic review process.

In February 1991, DoD awarded a contract to the American Council on Education (ACE) to administer the Military Installation Voluntary Education Review (MIVER) Project. ACE became responsible for coordinating military installation visits in cooperation with the Office of the Assistant Secretary of Defense, the military services, and educational institutions that provide degree programs on the installations being visited. Site team visitors, selected from a central pool of evaluators, were assigned the responsibility to conduct the review according to the policies and procedures established by the MIVER Governing Board (comprised of representatives of the Secretary of Defense, all the military services, the accrediting community, institutions providing programs on military bases, and previous team chairs).

The MIVER Project has two purposes: (1) to assess the quality of selected on-base voluntary education programs and (2) to assist in the improvement of such education through appropriate recommendations to institutions and the military services.

In the MIVER process, site team visitors assess the quality of the voluntary education programs by: (1) ensuring voluntary education on the military installation is appropriate and consistent with the standards of postsecondary education; (2) examining the nature of the relationship between the installation and each institution operating on that site; and (3) assessing the relevance of each institution's offerings on the installation to its own objectives and those of the installation. MIVER's purpose is quality assessment and enhancement but not accreditation. Hence, a MIVER review does not replace or supplant institutional accreditation.

Again, the MIVER process serves as a model for corporate America as evaluation of its education programs becomes essential.

Summary

While this paper does not pretend to present an exhaustive treatment of the military's contributions to the adult education movement education in the U.S., it does point to some contributions that have had significant influence. In fact, they have been fundamental to the march of progress, even at times, on the cutting edge of adult and continuing education.

The adult education movement is based on the conscious need to relate the worker and the workplace to the process of higher and continuing education in this country. It is a requirement of a democracy to increase the access of the working man and woman to the fruits of society through education. These two fundamental directions in the evolution of U.S. higher and adult basic education coincide with the major contributions of the military.

The GI Bill transformed the U.S. educational landscape by democratizing it. Working people belonged in college---not just in token numbers. The GI Bill exploded the idea that the "common" man and woman did not belong in college. The perception that blue collar personnel were automatically not college material was gone forever. This also had lasting impact on in-military education programs. The tuition assistance program became institutionalized for active duty servicemembers more or less as a corollary to the GI Bill for veterans. The notion was established that servicemembers in uniform deserved access and opportunity through adult and continuing education similar to those who remained in the civilian sector.

Tuition assistance in the military served as a model for employer-supported human development through education. Literacy education in the military stood at the very forefront of employer recognition that human beings can and must be developed academically to work and live in an increasingly technical world. The promises of opportunity and access to higher education or advanced skills training are meaningless without the availability and access to developmental education or remedial academic skills training so necessary for the academically at-risk servicemembers. These factors are increasingly significant throughout the country today. The military's efforts at literacy education merit serious study in the civilian world.

The long-standing military practice of contracting out educational functions has high relevance in this era of downsizing, but there are substantive academic aspects also to consider. Employers may often be the best trainers in helping employees obtain and retain the necessary skills essential for job performance. But most often they are not the best educators. Individual learner-employees benefit from civilian education offered through institutions dedicated to the education process. For example, employers who turn to higher education for assistance in the development of their workers serve both themselves and their employees by opening up the processes of adult learning, not necessarily focused solely on specific job skills. . The military understood this early in its advocacy of individual self-development as a way of strengthening service to the military, particularly in the area of leader development.

Standardized testing, pioneered in the military, has had enormous impact on the adult and continuing education movement. The GED Testing Program has increased opportunity and access for millions of American adults. Similarly CLEP, ACT/PEP, SAT, ACT, and professional certification examinations are used extensively to document learning achievements or show the ability to learning. Why should a busy adult take a course if he/she already knows the subject matter and can meet the expected learning outcomes? The military's efforts to gain academic recognition of learning achieved through military training and job performance have also had profound significance both for experiential learning recognition and for making appropriate connections between training and education. It has shown that, with proper

evaluation, credit awarded based on workplace learning can be integrated into legitimate, traditional, college degree programs.

The military has been and remains a leader in recognizing that the home college campus is not the only place where college-level education can occur. The military led the way in bringing the campus to the student when the student could not go to the traditional campus for study. Off-campus education has evolved into a phenomenon in its own right. Distance education, in all of its modes and changing forms, brings education directly into the "electronic classroom," the workplace, learning center, or even the residence of the learner. The military has and remains on the leading edge of the distance education movement. The rest of adult and continuing education will surely follow. The same is true of competency-based education and advanced instructional technologies.

The military has created two models that deserve study and emulation in academe and by other large, non-military, employers. The Servicemembers Opportunity Colleges has developed workable models for integrating the academic programs of participating colleges, recognition of workplace learning, use of standardized testing, and transfer of credits into degree networks for the military's blue-collar workers -- the enlisted servicemembers. With focus on degree completion, the servicemember can enjoy real access to opportunities through higher education. The second model that deserves serious attention by both academics and employers is MIVER -- the Military Installation Voluntary Educational Review Project. Here the integration of workplace learning and college education is examined and critiqued. It is one thing to recognize that such integration is the goal, but another to achieve it. Employers, including the military, benefit from serious, ongoing third-party evaluation of their efforts.

The partnership between the adult education community and the U.S. military has been a highly productive one. Millions of individuals have benefited. The military seeks, often under very adverse circumstances, to provide the best possible quality of life and opportunity for self-development possible for its servicemembers. It track record in education has been fairly good. In the process, it has served as a valuable laboratory for adult and continuing education. In that laboratory, some remarkably productive innovations have evolved. Both adult and continuing education and the nation's servicemembers have profited from the partnership.

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Appendix

Excerpts from

The Armed Services and Adult Education
by
Cyril O. Houle, Elbert W. Burr, Thomas H. Hamilton, and John R. Yale (1947).

(An explosion of educational opportunities for servicemembers occurred during World War II with the formation of the Army Institute in December 24, 1941, later changed to the United States Armed Forces Institute (USAFI) in February 1943 after its services had been extended to the Navy, Marines and Coast Guard. Off-duty education programs, many through correspondence, were made available to servicemembers scattered throughout the world. Adult education came into its own in the military. After the war, the American Council on Education appointed a Commission on Implications of Armed Services Educational Programs. One of the products of that Commission was *The Armed Services and Adult Education* , authored by Cyril O. Houle, Elbert W. Burr, Thomas H. Hamilton, and John R. Yale (1947). Cyril Houle prepared the last chapter which took the "panoramic description" of the "great variety of activities carried out on an enormous scale" throughout the military during World War II and drew implications for civilian adult educators. Houle designed his work to help civilian adult educators become aware of the resemblances between adult education programs conducted in the military with their own programs and to speculate on whether such resemblances may help solve problems in the greater adult education community. The American Council on Education's 1994 *Principles of Good Practice for the Voluntary Education Programs on Military Installations* and its companion volume, the *Principles of Good Practice for the Institutions Providing the Voluntary Education Program on Military Installations* , are, in many respects, an extension of Houle's 1947 "Implications." The following excerpts provide some of Houle's key points)

What are the implications of all of the off-duty education programs of the armed services for all of civilian education? ...when programs of the magnitude of those of the armed services are to be related to the extremely diverse enterprises of modern civilian adult education, it is necessary to make careful distinctions lest one fall into a morass of confusion and uncertainty. .... There are two ways in which one adult educational program may be said to have implications for another: (1) when the first is similar in character to the second, and (2) when the existence of the first materially changes the character or scope of the second. ...All lines of evidence available indicate that the phenomenal growth of adult education will continue. Only yesterday the high school was attended by the few; now it is attended by the many. Similarly adult education even yet is for the few; it is reasonable to suppose that, as a result of broad social forces and an increasing individual realization of the values of learning, it will become the concern of the many. ...In the future it is likely that the Army and Navy off-duty programs will be considered to have been among the first of the large-scale adult educational activities. It appears important, therefore, to identify and record any principles which educators in the armed services discovered or which they supported by additional data, even through such principles cannot be stated with any finality or exactness.

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GENERAL IMPLICATIONS

1. Interest in education on the part of adults is very widespread. The success of many of the Army and Navy efforts serves as a powerful argument that, when programs are geared to real adult needs and interests and carried out effectively, mature people will respond.

2. A large number of service people have been introduced to education as part of their adult experience and will be motivated to continue learning if opportunities are present for them to do so. This conclusion seems clear for two major reasons. First, adults who have become accustomed to the idea of learning will not consider it strange to go on doing so. Second, many have discovered new interests which will lead them on to further learning.

3. Adult educational activities should be introduced into the primary associations and institutions to which people belong. The Army and the Navy were basic social organizations influencing and commanding loyalty of their personnel. Because those organizations themselves conducted programs of adult education, it seemed more natural and right for their personnel to participate in them. ...In civilian life, this same principle obtains, to the extent that there is a community of interest in an ongoing organization.

4. The more education mature people have, the more likely they are to want more. Again and again, both the Army and the Navy found that there was a positive correlation between formal education and participation in their programs. ...This fact has several meanings for civilian adult educators. As more and more of the population is made up of people who have had formal schooling, there will be greater and greater demand for adult education. The most immediate market for adult educational activities is among those who have had formal schooling. And finally, as those who have not had formal schooling are introduced into adult educational activities, the motivation to continue to learn will be increased.

5. Adult educational programs are especially successful where opportunities for recreation are limited. Numerous observers have reported that interest in Army educational programs varied inversely to proximity to organized forms of amusement. On the surface this implies that civilian adult educational agencies will be more successful when they have less competition with organized amusement. More basically it means that people, in their leisure time, will want to do things that they enjoy or from which they get some creative satisfaction.

6. Participation in adult education activities will be increased if they are located geographically close to the students. Army and Navy libraries, for example, found that their circulation was increased if they used a number of branches scattered through a camp or base rather than if they had one single central deposit of books. It might seem that this principle is too obvious to mention were it not for the fact that many adult educational agencies now place primary emphasis on concentrating their program in a few centers of a single location.

7. Adult educational activities may provide for marked increases in racial, religious, and social tolerance. Two different kinds of evidence support this conclusion. Some programs --notably the Army I and E activities--attempted to teach tolerance directly; those responsible for such efforts concluded that they had had some measure of success. More broadly, representatives of all different racial and religious groups participated together without serious difficulty in educational programs. They, therefore, had direct experience in working together toward common objectives.

IMPLICATIONS CONCERNING OBJECTIVES

8. Programs of adult education must be directed toward the achievement of goals which the students feel to be real and significant. With monotonous regularity, programs succeeded when they were based on needs and interests and failed when they were not.

9. The success of an adult educational program is enhanced if it starts at the level of the student and then proceeds to more abstract or broader things. This, too, is a commonly understood principle which has been borne out by Army and Navy experience. Men who were at first interested in relatively trivial books or classes could be led to have a much broader pattern of interests and understandings.

10. In any large group of mature people, the demand for adult education will be highly diversified and may change greatly from year to year. Those responsible for the Army and Navy programs quickly found that they were dealing with men and women who came from a broad range of backgrounds and therefore had a variety of needs and interests. Programs which were restricted to a few activities never drew as many people as did those which offered a varied bill of fare.

11. The motivations for learning grow in part out of the social climate in which the students live. Army and Navy programs built on interest inventories which explored the desires of individual men and women were frequently not as successful as those which studied the patterns of values created by immediate social groups. A group of "buddies" wanted to take courses together; the choice of the group depended on its pattern of values, frequently being most influenced by the opinions of the natural leader of the group.

12. The attitudes of adults may be changed at least to some extent by the provision of factual information. The orientation programs supported this contention fairly clearly.

13. Almost all people without the basic tools of learning can achieve them if courses are well taught. The Army literacy program succeeded in giving almost all of its students at least fifth-grade competence after several weeks of full-time training.

14. Adults may be more interested in studying broad cultural subjects than has heretofore been thought likely by educators. On a number of Army and Navy bases and in the Army universities overseas, the demand for art, music, dramatics, philosophy, and other kindred subjects far outran expectations. Clearly such courses must be directed toward adult interests but if this condition is met a very broad area of development appears possible.

IMPLICATIONS FOR ADMINISTRATION AND ORGANIZATION

15. Adult education cannot be successful unless those in charge of the total organization within it works are impressed with its role. Always, throughout the Army and Navy experience, the quality of the off-duty program was in part a reflection of the interest and cooperation of the higher authorities in the chain of command. An educational officer could sometimes surmount many of the obstacles placed in his way by his commandant, but his program was always made more difficult by them.

16. The organization and administration of a program of adult education should be kept, as far as possible, under local control, and initiative and the development of aspects of the program, uniquely suited to local conditions, encouraged. It may appear surprising that this principle should grow out of the experience of the armed services which, in popular fancy at least, are the best examples of centralized control. One educator who had an excellent opportunity to see the Navy program in many circumstances, however, points out that "the

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Educational Services officers who depended on the Bureau [of Naval Personnel] became frustrated and beaten individuals; those who lived off the land and developed their own programs on the basis of their own talents and local support they could obtain were, on the other hand, extremely successful in achieving the objectives of the program."

17. An adult educational program will succeed only when there is inspired and driving leadership. It would appear that, in both military and civilian practice, adult education cannot succeed without administrators who are in part leaders and in part promoters in the best sense of that term.

18. Supervisors should be given frequent opportunities to test the practicalities of their recommendations. The Army continually stressed the importance of going to the field--particularly overseas--as the best way to help Pentagon supervisors build programs of real and practical assistance. Civilian programs might well follow the Army's example.

19. Courses offerings in adult education should be organized in integrated blocks of work, each requiring a limited period of time for completion. A large number of Army and Navy officers felt this principle to be of importance. It was particularly appropriate in a situation in which men were often transferred, but it appeared to be true as well in other locations. Most men in the services--like most civilian adults--are not as yet used to extensive learning programs and would rather pursue several short courses, each complete in itself, than one long one.

IMPLICATIONS FOR METHODS

20. Adults will learn to do a task better if careful explanations are given as to both the immediate steps to be taken and the larger goal. This principle is borne out by extensive (Army and Navy) experience and by research investigation. This principle has applications for virtually every organized and sequential learning activity designed for mature people.

21. The learning of skills is enhanced by a presentation of the basic theory involved. In a study of inductees at a reception center, men were placed in two paired groups. One group was asked to participate in a class which presented basic theory and the other was not. The men who participated showed an 18 percent gain in mastery over those who did not participate.

22. The use of a variety of methods is better than reliance on a single method. This principle was followed again and again in the Army and Navy off-duty programs, particularly in attempts at orientation. It rather effectively negates the yearnings of some extremists to establish some one method--usually discussion, apprenticeship, or the presentation of audio-visual aids--as the chief or indeed the only valid method of adult education.

23. At every stage of the instructional process the student should see clearly how his learning is related to the other aspects of his mature life. The functional approach is designed to relate closely to life experiences and needs; by its very nature it promotes and sustains interest. Through this approach the program offers the student immediate use and application for his skills. ...Thus, he comes to realize that education pays profits. Reinforces by this knowledge, he often turns to his studies with renewed interest and effort.

24. Learning will be improved if the student is constantly made to feel responsible for his own education. ...Mature people simply do not understand learning experiences unless they feel they need them. The Army and Navy found that this initial motivation must be maintained or the learning program failed.

25. Informality of approach is helpful in the teaching of adults. Adults expect this kind of freedom and they will respond to it as well in civilian as in military life.

26. In using the discussion method on a sequential basis, greater response will be found if the meetings are regularly scheduled without too much intervening time, if the leaders have some authority and are especially trained, and if the topics are of current or personal importance. This rather specific set of dicta grew out of a study of the Army orientation program in which it was clearly demonstrated that men favored a once-weekly meeting, leadership by the company commander or officers specially trained, and topics pertinent to their immediate situation.

27. The use of the discussion method in educational activities has implications for the more effective performance of the basic work of an agency. It was found in both the Army and Navy that the educational program gave an opportunity for natural leaders to manifest themselves, for men to relieve personally felt tensions, and for problems which need special handling to come to light.

28. Correspondence instruction is a useful device for educating adults. The Army and Navy programs gave great impetus to this kind of instruction and indicated its potentialities to many people.

IMPLICATIONS FOR INSTRUCTIONAL MATERIALS

29. The armed services have developed a large number of materials which may be used directly or with little change by civilian programs. Many instructional materials were developed to meet such specially service-related needs that have no peacetime application. A vast range of others, however, would be exceptionally useful if they could be made available. Such use requires some method of channeling the resources.

30. Much of the instructional material used for adult education must be especially developed with that use in mind. The Army and Navy found again and again that textbooks and other materials built for high school students were not appropriate for use with adults. Teaching was markedly improved if special materials adapted to the particular purpose of a program were developed centrally by experts, tested out in sample situations, revised, and then made generally available.

31. Instructional materials for adults should be oriented toward the life situations in which mature people usually find themselves. The Army literacy program, for example, loaded its content heavily with content that stressed the military tasks ahead. The individual is made to realize that he cannot be successful in the Army if he is unable to read, write, and perform simple calculations. Motivation thus is intimately associated with the soldier's life pattern as are the instructional methods used.

32. Those who took part in military programs will have an increased respect for print as a vehicle of communication, instruction, and recreation. Books of all types were used by men who had not used books before. Advancements in rating and increase in pay came chiefly through reading and passing examinations--through some other less respectable methods were occasionally used. Survival itself depended in part on learning information contained in books.

33. Instructional materials can be made more widely usable through the inclusion of self-teaching devices. The idea of self-study is an attractive one to Americans, as the success of various "self-teaching" books on bridge, foreign languages, social dancing, and muscle-

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building clearly shows. The editorial staff of USAFI continually worked to change regular textual materials into self-teaching materials.

34. Phonograph records, coupled with instructional manuals, provide an effective method of teaching foreign languages, music, shorthand, and radio code. The materials used by USAFI proved this rather specific contention beyond any question.

35. The range of knowledge about and experience in the use of audio-visual aids was greatly extended. The Army and Navy used audio-visual aids very extensively and, as a consequence, learned something about them. ...It gradually began to be realized by all but extremists in the field that audio-visual aids are valuable only when they can be fitted easily and well into a program and are directly related to the objective sought.

36. The use of a variety of kinds of materials is more effective than the use of a single kind. It was shown on many occasions in the Army and Navy that visual devices were more effective when coupled with other methods of presentation.

IMPLICATIONS FOR LEADERS AND LEADER TRAINING

37. A large number of persons were for the first time concerned with the teaching and administration of adults educational activities. The successful conduct of the off-duty programs required a large number of persons to serve as leaders. Since such persons do not exist in large numbers in civilian life, it was necessary for the Army and Navy to impress into this kind of service a wide variety of people--school teachers and administrative officers, college teachers, librarians, and many others whose connection with formal education had been even more tenuous. Such persons had to learn about adult education the hard way, but many did learn. They returned to civilian life with some competence in adult education. ...Also significant will be the interest of many persons who are not connected with formal education in civilian life but whose experience as leaders in the off-duty programs will lead them to give support and encouragement as citizens and possible leaders to peacetime programs.

38. Students in the armed services programs considered the quality of the instructor to be one of the most effective factors in the success of such programs. While this principle can hardly be considered new, it is interesting and significant to realize that civilian experience was borne out in the military programs.

39. Many persons who have marked competence in subject matter skills or understandings may be used as instructors for adult educational activities. Both the Army and Navy were able to organize classes nearly anywhere and in nearly any subject-matter area.

40. The ability of teachers of adults may be markedly improved by training in methods of instructing mature persons. The Army particularly stressed method and attempted to give some training in this regard to the people who took part in its program.

IMPLICATIONS FOR GUIDANCE AND COUNSELING

41. The need for counseling and guidance among adults is very great. It is frequently thought that mature people have achieved a stage in life in which they are able to solve their own problems satisfactorily. The experience of the Army and Navy would uniformly tend to disapprove this conclusion. The need for counseling was emphasized perhaps more than any other point by persons who were consulted by the authors of this study. They (service personnel) require assistance in analyzing their educational needs and selecting those learning experiences which will help them to meet them.

42. A truly effective adult educational program cannot be established or maintained without guidance procedures. Both the Army and the Navy found that, where guidance was not available, men and women failed to engage in those activities which would be most helpful to them; consequently the retention rate was often extremely low.

43. A sound program of guidance rests in part on effective testing and evaluative procedures. The enormous size of the armed services required classification systems of great magnitude. These systems were based in part on comprehensive testing programs. It was found by both the Army and Navy educational officers that guidance was greatly facilitated by the information thus provided. In addition, specialized testing procedures were used in many programs.

IMPLICATIONS FOR STUDENT RECRUITMENT

44. The more people know of the availability of adult educational programs, the more they will participate. Studies in both the Army and the Navy showed that men who knew of the availability of the educational program and had a good bit of specific information about it were more apt to participate. Both services, therefore, used extensive publicity, based on modern advertising methods, to recruit students.

45. Basically recruitment of students rests on the excellence of the program. Despite the necessity for the use of promotional techniques as pump primers, there is a great deal of evidence to show that the most effective asset for recruitment in both the Army and Navy was a good program, and that educational officers who concentrated on sound objectives and techniques had no difficulty in securing students.

IMPLICATIONS FOR EVALUATION

46. Research in evaluation will improve the effectiveness of an adult educational program. The research findings supported sound educational principles which would otherwise have lacked concreteness and concerning which it might have been particularly difficult to convince old-line Army and Navy officers. Individual student progress was also evaluated extensively; as a result students were given ideas concerning their accomplishment and the respects in which they needed further improvement.

47. Attitude surveys are a helpful means of attuning an educational program to the needs of adults, particularly since such surveys are welcomed by participants. The value of such studies has been amply demonstrated in the preceding pages (of this work).

IMPLICATIONS FOR FINANCE

48. If a program can be objectively demonstrated to be useful and practical, objections to expenditures for it are less intense. This technique was used again and again with telling effect by those responsible for both Navy and Army off-duty programs.

49. Evidences of student interest in an adult educational program make it more possible to secure funds. Despite the fabled rigidity of control from the top down in the Army and Navy, officers tended to be impressed if the men in their command showed a wholehearted enthusiasm for the educational program. Such enthusiasm was used as an effective argument for more funds. Frequently adult educational agencies, particularly those provided at public expense, are timid about extending their program, pleading that they do not have adequate resources to extend a new service to all the people who might use it. The military experience would indicate that, if

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people like a service, their enthusiasm may be used to secure greater financial support, particularly when those served are themselves taxpayers.

IMPLICATIONS FOR PHYSICAL FACILITIES

50. Facilities used for adult education should be informal, flexible, and attractive. This principle is true for all education but it is particularly required for adults who voluntarily attend educational activities and who expect to find the facilities available attractive and useful. Both Army and Navy found that this principle held true.

51. Physical facilities must be designed in terms of the physical size of adults. It would seem almost impossible for a principle to be more self-evident than this one. Yet both military services and civilian agencies were often satisfied to undertake programs in facilities which were ludicrous for mature men and women. As a result, programs were seriously hampered and the drop-out rate was high.

SUMMARY

In the last war (World War II), the Army and Navy did not and could not regard off-duty education as their first and most important function. When a nation is at war, destruction of enemy power becomes the encompassing end. But the educational programs, even though incidental to the main issue and therefore always subject to neglect, were so vast that they influenced millions of men (and women). The armed services blazed a tortuous trail toward a great truth, the truth that everybody has a natural desire to learn and can profit from that learning. If civilian society is willing to accept this basic truth and begins to realize its fullest promise, a great good can be said to have come out of the war. Through the very struggle for democracy, a new implement for democracy will have been forged.

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